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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/009,687	12/13/2001	Masato Fujikake	1422-0509P	8189

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BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

EXAMINER	
REDDICK, MARIE L	

ART UNIT	PAPER NUMBER
1713	

DATE MAILED: 05/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

KB

Office Action Summary	Application No.	Applicant(s)	
	10/009,687	FUJIKAKE ET AL.	
	Examiner	Art Unit	
	Judy M. Reddick	1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09/25/03;01/20/04;02/24/04*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,5 and 7* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,5 and 7* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *09/25/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed 09/25/03 has been considered and scanned into the file.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 2, 5 & 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagasuna et al(U.S. 4,973,632) in combination with Ishizaki et al(U.S. 6,254,990 B1) .

Nagasuna et al disclose and exemplify water absorbent resins, compositions therefrom and processes for producing said water-absorbent resins wherein, said processes involve an aqueous solution of water-soluble ethylenically unsaturated monomer having a viscosity of 15 cps or more, determined by a Brookfield rotational viscometer (25.degree. C., 0.6 rpm), with using a sucrose fatty acid ester and/or a polyglycerol fatty acid ester as a dispersing agent, are dispersed and suspended in a inert hydrophobic organic solvent and polymerized by an initiator for radical polymerization. More specifically, Nagasuna et al teach that in the production process, examples of the water-soluble ethylenically unsaturated monomer constituting the water-absorbent resin in the present invention, include monomers of anionic character such as acrylic acid, methacrylic acid, crotonic acid, maleic acid and its anhydride, fumaric acid, itaconic acid, and 2-(meth)acryloylethanesulfonic acid, and 2-(meth)acryloylpropanesulfonic acid, and 2-(meth)acrylamido-2-methylpropanesulfonic acid, vinylsulfonic acid, styrenesulfonic acid and the like and their salts; monomers containing

nonionic hydrophilic substituent such as (meth)acrylamide, N-substituted (meth) acrylamides, 2-hydroxyethyl (meth)acrylate, 2-hydroxypropyl (meth) acrylate, methoxypolyethylene glycol (meth)acrylate, polyethylene glycol (meth)acrylate and the like; monomers of cationic character such as N,N'-dimethylaminoethyl (meth)acrylate, N,N'-diethylaminoethyl (meth)acrylate, N,N'-diethylaminopropyl (meth)acrylate, N,N'-dimethylaminopropyl (meth)acrylamide, and the like and their quaternary salts. These compounds can be used as alone or mixture of two or more compounds. Preferable are a kind of compound or a mixture of two or more compounds chosen from the following three groups of compounds: (meth)acrylic acid, 2-(meth)acryloylethanesulfonic acid, 2-(meth) acrylamido-2-methylpropanesulfonic acid, and their salts; and N,N'-dimethylaminoethyl (meth)acrylate and their quaternary salts; and methoxypolyethylene glycol (meth)acrylate and (meth)acrylamide. Nagasuna et al further teach that although the monomer concentration in an aqueous monomer solution is generally variable in a wide range, the preferred range is from 20 weight % up to saturation. Nagasuma et al also teach that the water-absorbent resin relating to the present invention comprises a self-crosslinking type prepared in absent of a crosslinking agent and a type co-polymerized during polymerization with a small amount of crosslinking agent, which has polymerizable unsaturated groups or reactive functional groups. As examples of the crosslinking agents are cited N,N'-methylene-bis(meth)acrylamide, N-methylol(meth)acrylamide, ethylene glycol (meth)acrylate, polyethylene glycol (meth)acrylate, propylene glycol (meth)acrylate, polypropylene glycol (meth)acrylate, glycerol tri(meth)acrylate, glycerol mono(meth)acrylate, polyfunctional metal salts of (meth) acrylic acid, trimethylolpropane tri(meth)acrylate, triallylamine, triallyl cyanurate, triallyl isocyanurate, triallyl phosphate, glycidyl (meth)acrylate. As examples of agents having reactive functional groups for example, in a case that a monomer has a carboxyl and/or carboxylate group, polyhydric alcohol derivatives such as ethylene glycol, diethylene glycol, triethylene glycol, tetraethylene glycol, polyethylene glycol, glycerol, polyglycerol, propylene glycol, diethanolamine, triethanolamine, polyoxypropylene, oxyethyleneoxypropylene block co-polymer, pentaerythritol, and sorbitol; polyglycidyl

derivatives such as ethylene glycol diglycidyl ether, polyethylene glycol diglycidyl ether, glycerol polyglycidyl ether, diglycerol polyglycidyl ether, polyglycerol polyglycidyl ether, sorbitol polyglycidyl ether, pentaerythritol polyglycidyl ether, propylene glycol diglycidyl ether, and polypropylene glycol diglycidyl ether; aziridine derivatives and related compounds such as 2,2-bishydroxymethylbutanol-tris [3-(1-aziridinyl) propionate], 1,6-hexamethylene-diethylene urea, and diphenylmethane-bis-4,4'-N,N'-diethylene urea; haloepoxy compounds such as epichlorohydrin and .alpha.-methylchlorohydrin; polyaldehydes such as glutaraldehyde and glyoxal; polyamine derivatives such as ethylene diamine, diethylene triamine, triethylene tetramine, tetraethylene pentamine, pentaethylene hexamine, and polyethylene hexamine; polyisocyanates such as 2,4-toluylenediisocyanate and hexamethylenediisocyanate and polyvalent metal salts, these crosslinking agents being used in an amount of about 0.001.about.1.0 mol. per water-soluble ethylenically unsaturated monomer. See, e.g., the Abstract, cols. 3-8 and Runs 1-8 of Nagasuna et al. Moreover, Nagasuna et al @ col. 12 teach aqueous compositions comprising 100 parts by weight of water-absorbing resin (A1)-(A8) and comparative Runs (B1) – (B3), 0.3 parts by weight of diethylene glycol, 4 parts by weight of water and 0.5 parts by weight of isopropanol.

The disclosure of Nagasuna et al differs basically from the claimed invention as per the non-express disclosure of an embodiment directed to the use of the specifically defined compound (b) having at least two ethylenic unsaturated groups and selected from the group consisting of pentaerythritol tetraallyl ether, tetraallyloxyethane and polyallyl saccharose per the inventive claims. However, it is known per Ishizaki et al to use compounds(crosslinking agents) having at least two ethylenic unsaturated groups which include tetraallyloxyethane, pentaerythritol tetraallyl ether, etc., taught as equivalents in scope to the internal crosslinking agents of Nagasuna et al, as internal crosslinking agents in the similar such polymerization of acid group-containing unsaturated monomer(s) and therefore, it would have been obvious to the skilled artisan to use the tetraallyloxyethane and/or pentaerythritol tetraallyl ether cross-linking agents of Ishizaki et al in lieu of the crosslinking agents of Nagasuna et al, based on their identified

equivalency in scope in similar such polymerizations, and with a reasonable expectation of substantially equivalent results, i.e., a reasonable expectation of success. Criticality for such, commensurate in scope with the claims, not having been demonstrated on this record. See cols. 6-8 of Ishizaki et al.

Response to Arguments

4. Applicant's arguments, see pages 8-10 of the REPLY, filed 01/20/04, with respect to the rejection of claims 1-7 under 35 USC 103(a) as being unpatentable over Sehm(U.S. 4,419,502) have been fully considered and are persuasive. The rejection under 35 USC 103(a) of claims 1-7 as being unpatentable over Sehm has been withdrawn. Applicant's arguments with respect to claims 1-7, as they apply to Nagasuna et al, have been considered but are moot in view of the new ground(s) of rejection as set forth supra.

5. Applicant's request for a telephonic interview(page 4 of the SUPPLEMENTAL REPLY filed 02/24/04) is acknowledged. However, due to time constraints, it is suggested that applicant telephone the Examiner to schedule an interview in advance of the Office's projected response date.

Conclusion

6. The additional prior art to Demishev et al(SU 767181 B, Abstract only) listed on the attached FORM PTO 892 is cited as of being illustrative of the general state of the art.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on

the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Judy M. Reddick whose telephone number is (571)272-1110. The examiner can normally be reached on Monday-Friday, 6:30 a.m.-3:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (571)272-1114. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Judy M. Reddick
Primary Examiner
Art Unit 1713

JMR
05/05/04